

ABSTRACT

5 A large-heat-input butt-welded joint of welded
structures prepared by butt-welding high-strength steel
plates over 50 mm in thickness, having excellent brittle
fracture resistance, is characterized by: (a1) the
hardness of the weld metal is not more than 110% of the
hardness of the base metal or (a2) the hardness of the
weld metal is not less than 70% and not more than 110% of
10 the hardness of the base metal, and, as required, (b) the
width of the weld metal is not more than 70% of the plate
thickness of the base metal, (c) the width of the region
affected by welding whose hardness is softened to not
more than 95% of the hardness of the non-heat-affected
15 base metal has a width not less than 5 mm, and/or (d) the
prior austenite grain size in the heat-affected zone
(HAZ) contacting the welding fusion line is not more than
200 μm .